DATA EVALUATION RECORD

1. Chemical: Chlorpyrifos - methyl (Shaughnessy #059102)

2. Formulation: Unknown

3. Citation: Cunningham, D. and E. Schafer. 1968. Bird toxicity or stupefacient test results. Denver Wildlife Research Center, USDI, Denver, Colorado. (EPA Accession #242149; Report #3A)

4. Reviewed by: James D. Felkel
Wildlife Biologist
Ecological Effects Branch/HED

5. Date Reviewed: May 21, 1980

6. Test Type: Avian acute oral toxicity

A. Test Species: Starling (Sturnis vulgaris)
Red-winged Blackbird (Agelaius phoeniceus)
(scientific names above not cited in report)

7. Reported Results:

The acute oral LD_{50} is reported to be >100 mg/kg for Starlings and 100 mg/kg for Redwinged Blackbirds.

8. Reviewer's Conclusions:

This study is not considered scientifically sound as submitted due to small sample sizes and numbers of treatments, lack of reported controls, and incomplete identification of the material being tested (see Rationale below). It does not meet the requirements for an avian acute oral LD_{50} test.

Materials/Methods

A. Test Procedures

Two (2) individuals of each species were administered 100 mg/kg of the chemical by tube to the stomach. Two (2) additional Redwinged Blackbirds were administered 56 mg/kg of the chemical by the same method. Immobilization, mortality, emesis and weight change were examined.

B. Statistical Analysis

Methods were not described.

Discussion/Results

Neither of the two Starlings tested incurred immobilization, emesis, or death but lost 9 and 11 grams of body weight, respectively. One Red-winged Blackbird that received 100 mg/kg of toxicant became immobilized after 17 minutes and died after 48 minutes. Weight loss for the two blackbirds receiving 100 mg/kg was two (2) and four (4) grams respectively while the two receiving 56 grams lost six (6) and seven (7) grams, respectively. None of the surviving blackbirds incurred immobilization or emesis. The Starling acute oral LD_{50} is reported to be >100 mg/kg while that of the Red-winged Blackbird is reported to be 100 mg/kg (95% confidence limits of 32-320 mg/kg).

Reviewer's Evaluation

Test Procedures

Controls and the age of the birds were not reported. Sample sizes and numbers of treatments were too small to give statistically sound results.

Protocols, including the rearing history and selection of birds, housing conditions, weight, food consumption, and percentage solvent used, were not reported.

Species tested were not those recommended in EPA Proposed Guidelines (1978). The percentage active ingredient of the test substance was not given.

Statistical Analysis

Methods were not reported.

Discussion/Results

The following table summarizes the reported results:

Redwinged Blackbird

Concentration (mg/kg)	Number exposed	Number dead	Percent dead
100	2	1	50
56	2	0	0

When there are less than 2 concentrations at which the percent dead is between 0 and 100, neither the moving average nor the probit method can give statistically sound results. With 50% mortality at 100 mg/kg, the binomial test indicates an approximate LC_{50} of 100 mg/kg.

Starling

No results can be calculated when there are less than two (2) treatments.

D. Conclusions

1. Category: Invalid

2. Rationale: The percentage active ingredient of the test substance, controls, and the age of the birds were not reported. Sample sizes and numbers of treatments were too small to give statistically sound results. Species tested were not those recommended in EPA Proposed Guidelines (1978). Protocols were not cited.

3. Repairability:

Starling data: Not repairable.

Red-winged Blackbird data: A full description of concurrent controls, age of birds, test substance, and protocols may enable consideration of the data as Supplemental.